



## Case Study

### Physiological Status Monitoring and Fire Training



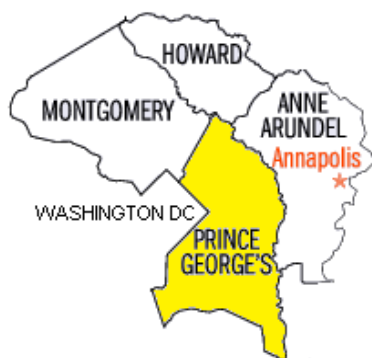
#### Prince George's County Profile

Prince George's County Fire/EMS Department Fire/EMS is responsible for:

- Fire Suppression
- Emergency Medical Services
- Fire Prevention
- Fire and Rescue Communications
- Research
- Training and
- Coordinating the Volunteer Fire Companies

Prince George's County encompasses a land mass of 487 square miles with 119 miles of shoreline. There are 44 Fire/EMS Stations staffed by over 1,900 active career and volunteer firefighters and emergency medical providers, who responded to 122,600 calls for service in 2009.

The county is located in the Maryland suburbs, borders Washington DC and is part of the National Capital Region Homeland Security Program.



#### PSM Responder Prince George's County

The Zephyr PSM Responder system was used during training evolutions in field testing of "Flat-Pack" Self-Contained Breathing Apparatus (SCBA), as well as in the training of recruit firefighters participating in the International Association of Fire Fighters (IAFF) Fire Ground Survival Class. Both events took place at the Department's training academy in Cheltenham.

The PSM Responder system monitors vital signs and posture for up to 64 people, relaying data via a wireless harness to a 2-way radio onto a laptop PC. The data is interpreted and displays information, which helps determine whether personnel are fatigued, dehydrated, injured or healthy. The system is made up of three parts, including a BioHarness™ Sensor, 2-way portable radio and PC application software.

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*Captain Grady Valencis  
Prince George's County Fire Captain*



Throughout multiple days of training, Fire Instructors were impressed with the insight the PSM system provided in terms of general fitness and level of exertion candidates experienced during the practicum. Prince George's County Fire Captain Grady Valencis stated, "I believe the PSM is a valuable tool to monitor the effects our job-related tasks have on our workforce. It could also be utilized to make a case for additional staffing, in order to assist us in our performance on emergency scenes."

While the PSM is effective for all emergency personnel, it is best used where deployment is in high-stress and high-exertion incidents. Hazardous Materials, Bomb Squad, High-Angle and Confined-Space teams require the monitoring of vitals before and after their assigned activity. The PSM would provide real-time monitoring and could enhance the length of deployment and subsequent effectiveness. This would minimize the need to rotate personnel and consume resources for extended periods. Real-time monitoring is also effective in assisting Incident Commanders with making informed decisions on removing deployed personnel in a timely manner, as data dictates.

Local users of the system include Maryland National Guard 32nd CST and Baltimore City Fire and Police Training Academies. Among those across the country who either have units, or will soon receive them, are Sarasota County, Florida; Hall County, Georgia Sheriff; Illinois State Police; Jacksonville Sheriff EOD.



As discussed in the Prince George's blog, <http://pgfdpio.blogspot.com/2010/06/physiological-status-monitoring-tested.html>; Overall, the PSM is an immensely invaluable addition to the tool boxes of the Incident Commander and the Safety Officer. Stress and cardiac overexertion can easily lead to a heart attack, which remains the leading cause of firefighter's deaths in the United States. Real-time monitoring of the vital signs of personnel involved in high-stress environments provide insight into hidden dangers and lurking ailments that threaten firefighter safety and survivability. The PSM is an effective weapon for providing protection to our most valuable assets—our personnel. Personal physiological status monitors can help ensure "everyone goes home."

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